

II. The 35 U.S.C. § 102(b) Rejections:

Claims 1, 4, 5, 9, 14, 16 and 18-20 have been rejected under 35 U.S.C. §102(b) over Freeman (U.S. Patent No. 4,946,532). As mentioned at page 1 of the present specification, Freeman relates to composite facestocks and liners made of multilayer polymeric films. The multilayer film is comprised of a coextrudate containing a core or base layer and skin layers overlying each side of the core layer. As disclosed therein, the films of Freeman are uniaxially oriented in the machine direction.

Claim 1 is directed to a multilayer thermoplastic film, comprising:

- (1) at least one polyolefin core layer having a first side and a second side;
- (2) at least one abrasion resistant thermoplastic skin layer overlying the first side of the core layer; and
- (3) at least one second thermoplastic skin layer overlying the second side of the core layer,

wherein the composition of the core layer is different than the composition of the skin layers, the core layer and the skin layers being characterized by the absence of PVC, and wherein the multilayer thermoplastic film is an unoriented film and wherein an intermediate layer positioned between the core layer and the second thermoplastic skin layer, the supplemental core layer being characterized by the absence of PVC.

Since Freeman requires a machine direction oriented film, Freeman cannot anticipate or render obvious the unoriented film of claim 1. Accordingly, claims 1, 4, 5, 9, 14, 16 and 18-20 are patentable over Freeman.

Claims 1-3, 6-8, 13 and 15 have been rejected under 35 U.S.C. § 102(b) over Sugimoto et al. (U.S. Patent No. 4,888,223). Sugimoto et al. relates to heat-shrinkable food packaging films composed of a polyolefin resin film as innermost layer to be

contacted with the food and a base film having high impact resistance and high abrasion resistance as outermost layer, with or without an intermediate film interposed therebetween. When the base layer and the innermost layer have suitable adhesion to one another an intermediate layer need not be utilized. However, when the base layer and the innermost layer have little or no adhesion one or more intermediate layer need be present. The one or more intermediate layers can be composed of modified polyolefin resins, ionomer resins, ethylene-ethyl acrylate resins, ethylene-acrylic acid resins, ethylene-vinyl alcohol copolymers, aromatic polyamide resins, ethylene-methacrylic acid copolymer and mixtures thereof.

As would be apparent to one of ordinary skill in the art, the films of Sugimoto et al. must be oriented films in order to be heat-shrinkable. As disclosed in the Example of Sugimoto et al. the film is processed to impart biaxial orientation to the film. This orientation ensures that the film is heat-shrinkable by at least 20% in both the machine and transverse directions when subjected to a temperature of about 80 °C for 30 seconds.

The multilayer films of the present invention are unoriented films which are used for signage films. Heat-shrinkage in such films is undesirable as this could lead to distortion of any graphics incorporated therein and/or designs made from such films. Since the multilayer films of the present invention are unoriented, Sugimoto et al. cannot anticipate or render obvious such films. Accordingly, claims 1-3, 6-8, 13 and 15 are patentable over Sugimoto et al.

Claims 1, 6, 7, 10, 11, 13 and 16 have been rejected under 35 U.S.C. § 102(b) over Fukushima et al. (U.S. Patent No. 4,542,061). Fukushima et al. relates to an infrared radiation absorbing film which has improved heat retention, transparency, abrasion resistance and durability. The film of Fukushima et al. is composed of an olefin resin mono-layer or a multi-layer olefin resin containing film. As noted at column 3, lines 28-29, the olefin resin mono layer or core contains an inorganic filler.

Claim 1 as amended includes an intermediate positioned between the core layer and the second thermoplastic skin layer, the supplemental core layer being characterized by the absence of PVC .

Since Fukushima et al. does not teach or suggest the intermediate layer, Fukushima et al. cannot anticipate or render obvious the present invention recited in claim 1. Accordingly, claims 1, 6, 7, 10, 11, 13 and 16 are patentable over Fukushima et al.

Claims 1, 4-7, 12, 13, and 16-18 have been rejected under 35 U.S.C. § 102(b) over Benjamin et al. (U.S. Patent No. 5,754,269). Benjamin et al. relates to a thermoplastic blocking composition for use in forming or attaching a lens block to an ophthalmic lens blank or a lens blank coating or tape and to preformed base blocks and lens blank tapes used with the blocking composition. Also disclosed are tape backings which comprise a blend of a polar polymer and a "diluting" polymer (e.g., a "non-polar" polymer). This combination of a polar polymer and a "diluting" polymer provides an ideal surface against which a polycaprolactone blocking composition may be adhered.

Benjamin et al. also discloses that the tapes may also include additional "core" layers of materials (including layers of materials that do not comprise an olefin moiety and an acid moiety) between the adhesion promoting surface layer and the pressure sensitive adhesive layer. Benjamin et al. does not however disclose a tape with an abrasion resistant skin layer. The tapes disclosed in Benjamin et al. are used as lense protection tapes in order to adhere to a lense a lense blocking composition. Nowhere in Benjamin et al. is it disclosed that the tapes utilized for adhering the inventive blocking compositions to a lense contain an abrasion resistant skin layer.

As noted above, the present invention is directed to a multilayer thermoplastic film which in part includes:

- (1) at least one filler free polyolefin core layer having a first side and a second side; and
- (2) at least one abrasion resistant thermoplastic skin layer overlying the first side of the core layer; and
- (3) at least one second thermoplastic skin layer overlying the second side of the core layer,

wherein the composition of the core layer is different than the composition of the skin layers, the core layer and the skin layers being characterized by the absence of PVC, and wherein the multilayer thermoplastic film is an unoriented film.

Since the tapes disclosed in Benjamin et al. do not contain an abrasion resistant thermoplastic skin layer, Benjamin et al. cannot anticipate or render obvious the present invention as recited in claim 1, claims 1, 4-7, 12, 13 and 16-18 are patentable over Benjamin et al.

III. The 35 U.S.C. § 103(a) Rejections:

Claims 15, 21-23, 26, 28, 29, 31, 33 and 34 have been rejected under 35 U.S.C. § 103(a) over Fukushima et al. in view of Sugimoto et al. and Tolliver et al. (U.S. Patent No. 4,896,943). The teachings of Fukushima et al. and Sugimoto et al. are discussed in detail above.

The Examiner contends that Fukushima et al. discloses all of the features of the present invention except that: (1) a concentration of a second polymeric material in a core layer is 2 to 25 % by weight based on the weight of the core layer; and (2) an intermediate layer is positioned between the core layer and a first or second skin layer and a top layer is positioned on the skin layer.

The Examiner contends that these features are disclosed in the secondary art of Sugimoto et al. and Tolliver et al.

As discussed above, Sugimoto et al relates to an oriented film. The claims as amended are directed to unoriented films. A person skilled in the art would not look to an oriented film patent as suggested by the present office action.

Tolliver et al. relates to an encapsulated-lens retroreflective sheeting comprising a monolayer of lenses partially embedded in a binder layer, a specularly reflective layer underlying the lenses, and a cover film sealed to the binder layer along a network of interconnecting lines forming hermetically sealed cells within which the lenses are encapsulated and have an air interface, wherein the cover film comprises polyethylene, or polypropylene, or a copolymer comprising a major portion by weight of at least one of ethylene or propylene and a minor portion by weight of a comonomer.

The Examiner points to Tolliver et al. for the teaching that it is well known in the art that the adhesion of different layers within a multilayer film can be enhanced by using either layers composed of resins from the same family; or alternatively by the addition of an intermediate layer between two dissimilar layers which has a high degree of affinity for both layers.

Contrary to the Examiner's assertion, the cited art fails to disclose, teach or suggest the present invention as recited in claims 1 and 21. Tolliver deals with the difficulties of incorporating glass beads into a film. A person skilled in the art would not look to Tolliver's teaching regarding retroreflective materials as suggested by the present office action.

As noted above, both Fukushima et al. and Sugimoto et al. fail to disclose, teach or suggest such a film. Tolliver et al. fails to cure the deficiencies of both Fukushima et al. and Sugimoto et al. in that Tolliver fails to disclose, teach or suggest the multilayer thermoplastic film of both claims 1 and 21. Specifically, Tolliver et al. fails to disclose, teach or suggest a multilayer thermoplastic film that in part contains:

- (A) **a filler free polyolefin core layer** having a first side and a second side;
- (B) an abrasion resistant thermoplastic skin layer overlying the first side of the core layer; and
- (C) a second thermoplastic skin layer overlying the second side of the core layer,

wherein the composition of the core layer is different than the composition of the skin layers, the core layer and the skin layers being characterized by the absence of PVC, and **wherein the multilayer thermoplastic film is an unoriented film**. Since Tolliver et al. fails to cure the deficiencies of Sugimoto et al. and Fukushima et al., the cited art fails to render obvious claims 15, 21-23, 26, 28, 29, 31, 33 and 34. As such, these claims are patentable over the art made of record.

Claims 21-28, 30 and 31-36 have been rejected under 35 U.S.C. § 103(a) over Benjamin et al. in view of Fukushima et al. The teachings of Benjamin et al. and Fukushima et al. are discussed above in detail.

As noted above, Benjamin et al. fails to disclose, teach or suggest a multilayer thermoplastic film which contains an abrasion resistant skin layer; and Fukushima et al. fails to disclose, teach or suggest a multilayer thermoplastic film which an intermeidate layer as difine in claim 1. Therefore the combination of Benjamin et al. and Fukushima et al. lacks at least two features recited in pending claim 21. Accordingly, claims 21-28, 30 cannot be rendered obvious by the combination of Benjamin et al. and Fukushima et al. given the deficiencies in the cited art.

Claim 41 has been rejected under 35 U.S.C. § 103(a) over Benjamin et al. The teachings of Benjamin et al. are discussed above in detail. As noted therein, Benjamin et al. fails to disclose, teach or suggest multilayer thermoplastic film which contains an abrasion resistant skin layer. Claim 41 requires an abrasion resistant layer which is disposed on one major surface of a polyolefin core layer. Accordingly, since Benjamin et al. fails to disclose, teach or suggest each and every feature of claim 41, Benjamin et al. cannot render obvious claim 41.

IV. Conclusion:

Thus, withdrawal of the above-mentioned rejections and allowance of claims 1, 3-21, 23-37 and 40-41 is respectfully requested. ✓

Should the Examiner believe that a telephone interview would be helpful to expedite favorable prosecution, the Examiner is invited to contact Applicants' undersigned attorney at the telephone number listed below.

In the event any fees are due in connection with the filing of this document, the Commissioner is authorized to charge those fees to our Deposit Account No. 18-0988 under Attorney Docket No. AVERP2168USA.

Respectfully submitted,

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APPENDIX

The following contains a detailed listing of the changes made to the amended claims. Please note, underlining denotes additions and ~~[bracketed strikeout]~~ denotes deletions.

In The Claims:

Claims 1 and 21 have been amended as follows:

1. (Amended) A multilayer thermoplastic film, comprising:
 - at least one polyolefin core layer having a first side and a second side,
 - at least one abrasion resistant thermoplastic skin layer overlying the first side of the core layer, and
 - at least one second thermoplastic skin layer overlying the second side of the core layer;wherein the composition of the core layer is [being] different than the composition of the skin layers, ~~[and]~~ the core layer and the skin layers being characterized by the absence of PVC, and the multilayer thermoplastic film is an unoriented film, and wherein an intermediate layer positioned between the core layer and the second thermoplastic skin layer, the supplemental core layer being characterized by the absence of PVC.
21. (Amended) A multilayered thermoplastic film, comprising:
 - a thermoplastic core layer having a first side and a second side, the core layer comprising: a polyolefin having a density in the range of about 0.89 to about 0.97 grams per cubic centimeter; a second polymeric material selected from the group consisting of ethylene-acrylic acid copolymers, ethylene-methacrylic acid copolymers, ionomers derived from sodium, lithium or zinc and an ethylene/methacrylic acid copolymer, and combinations thereof, the second thermoplastic material being present at a concentration of about 2% to about 25% by weight based on the weight of the core layer; and a light stabilizer at a concentration of about 1,000 to about 10,000 ppm based on the weight of the of core layer;
 - an abrasion and scuff resistant clear first thermoplastic skin layer overlying the first side of the core layer, the first skin layer comprising a light stabilizer at a concentration of about 2,000 to about 20,000 ppm based on the weight of the first skin layer; and
 - a clear second thermoplastic skin layer overlying the second side of the core layer; the second skin layer comprising a light stabilizer at a concentration of about 1,000 to about 15,000 ppm based on the weight of the second skin layer,

wherein the composition of the core layer is [being] different than the composition of the skin layers, the core layer and the skin layers being characterized by the absence of PVC, and the multilayer thermoplastic film is an unoriented film and, and wherein an intermediate layer positioned between the core layer and the second thermoplastic skin layer, the supplemental core layer being characterized by the absence of PVC.